

BOOK REVIEW

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Geeking out with Darwin

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Abstract

Darwin: A Graphic Biography provides a lighthearted, generally accurate, and overall delightful account of Darwin's life and work in the form of a graphic novel.

Keywords: Teaching evolution, Charles Darwin, Eugene Byrne, Simon Gurr, Comics/cartoons/graphic novels

Darwin: A Graphic Biography, Eugene Byrne and Simon Gurr. Washington, DC: Smithsonian Books, 2013. Pp. 100. p/b \$9.95.

The young Charles Darwin was a geek *avant la lettre*.^a He neglected what he was supposed to be studying, whether it was classics, medicine, or divinity, in favor of what really interested him: stuffing birds and collecting beetles. He deliberately ate weird food, including hawk, bittern, and brown owl in Cambridge, and rhea, puma, and armadillo in South America. His father railed at him, 'You care for nothing but shooting, dogs, and rat-catching, and you will be in a disgrace to yourself and all your family!' So in the current era of geek chic, it is not surprising to find a biography of Darwin appearing in the archetypal geek format: a comic. Even the subtitle of *Darwin: A Graphic Biography* - written by Eugene Byrne; illustrated by Simon Gurr - ironically acknowledges the intrinsic geekitude of its subject and its approach: 'The really exciting and dramatic story of a man who mostly stayed at home and wrote some books'.

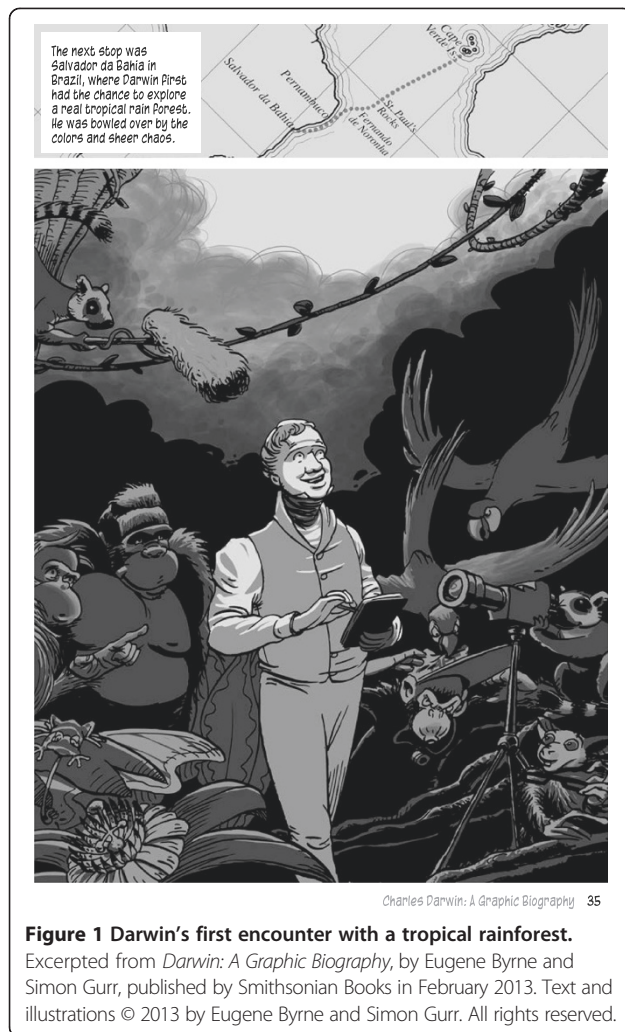
There is something geeky, too, about Byrne's dense blocks of text, appearing in practically every panel; it is rare for a page to have as little text as page 35 (Figure 1), where Darwin's rapture at his first encounter with a tropical rain forest is aptly presented wordlessly. And the forbidding appearance of these blocks of text is perhaps likely to deter some in the target audience (ages 10 through 15 years). But those who are not deterred will be amply rewarded: the writing is clear, concise, and uncomplicated, certainly accessible to the intended reader. It is, moreover, well-paced, well-organized, and - with a few exceptions - well-researched. A reasonable

amount of relevant historical, religious, and scientific background is presented along the way, and there is a healthy balance between Darwin's life and Darwin's work, with the discussion alternating between the two just enough to avoid tedium.

The story of Darwin's life told here is familiar: a happy childhood, though marred by the death of his mother; a college education marked by a preference for naturalizing over study; a 5-year voyage around the world on the *Beagle*; a marriage to his cousin Emma, and a retirement to a country home in Kent, culminating in scientific fame but unhappily punctuated by his own illness ('we really can't be sure what he was suffering from' is Byrne's plausible conclusion (p. 70)) and the death of three of his 10 children. Only Annie's death in 1851 is specifically mentioned, with Byrne saying, 'This shocking, horrible experience undermined his belief in a loving God' (p. 73) - which, however, is historically dubious: 'nowhere in the millions of written words by Darwin that survive did he ever indicate, directly or indirectly, that Annie's death had anything to do with his loss of faith' (van Whye and Pallen 2012, p. 107).

The account of Darwin's scientific work is also familiar: his early interest in nature blossoming on the *Beagle* into substantial contributions to geology and paleontology; the beginnings of his thoughts on the transmutation of species in the 1830s (with the 'I think' tree appearing on p. 59); the arrival of Wallace's essay 'On the Tendency of Varieties to Depart Indefinitely from the Original Type' in 1858, the joint announcement at the Linnean Society in the same year, and the hasty publication of the *Origin* in 1859; and (in brief but welcome discussions), his books on orchids, insectivorous plants, and earthworms as well as *The Descent of Man* and *The Expression of the Emotions*. The reader will thus receive not only a fine overview of the range of Darwin's scientific interests but also a good

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sense of his restless curiosity and relentless perseverance - 'It's dogged as does it' was a favorite motto of his, after all.

Throughout, Darwin's science is generally conveyed accurately and comprehensibly. Common descent and natural selection are carefully distinguished, with natural selection explained with a droll fictional example: 'the Skörg™ (*Animalis fictionalis*)'. Topics such as biogeography, speciation, and the evidence from the fossil record receive clear, if understandably brief, treatments. There are a few minor missteps along the way. Darwin is claimed not to have 'speculated about how life had originated, only how it evolved' (p. 83): a claim true only if 'in public' is understood, since Darwin famously speculated to Hooker about life originating in a 'warm little pond' (quoted in Peretó *et al.* 2009, p. 396). Darwin is said to have 'had no idea *how* natural selection happens' (p. 87), which is misleading, since the point is only that Darwin was mistaken in his conception of heredity.

When Darwin is left behind, the treatment of scientific topics is sometimes not as lucid or as steady. A page on

the evolution of the vertebrate eye is almost wholly occupied with a diagram of the eye, leaving the text's assertion that 'there are sensors and "eyes" from every stage in this sequence [leading toward the vertebrate eye] in existing living animals' (p. 86) sadly unillustrated. The conflict between blending theories of heredity (such as Darwin's) and natural selection is not adequately explained, so the accomplishment of the Modern Synthesis is not clear. Birds are misleadingly described as descending separately from reptiles rather than as being dinosaurs in their own right. The discussion of evolution in action is limited to microevolution: while it was valuable to stress practical applications such as medicine and agriculture, it would have been worthwhile to cite observed instances of macroevolution as well.

Toward the end of the book, common misconceptions about evolution are addressed. With regard to the phrase 'survival of the fittest', Byrne correctly says that it is not a matter of 'the strongest, fastest or most intelligent', but incorrectly says, 'The "fittest" are the species best adapted to their particular environment' (p. 93), which accords with neither Darwin's use (Paul 1992) nor the modern uses (Beatty 1992). With regard to the phrase 'only a theory', Byrne is clear, concise, and correct: 'Evolution is a theory that has passed more than 150 years' worth of tests' (p. 94). And with regard to the supposed conflict between evolution and Christianity, Byrne observes, 'Accepting the theory of evolution doesn't make you an atheist' (p. 94), although he then enunciates a misleadingly and needlessly limited definition of theistic evolution (as 'God set everything in motion and then stood back'; contrast, for example, Peters and Hewlett 2003, ch. 6).

But what about the pictures? Gurr's depictions of historical figures are clearly based on a study of contemporary portraits and photographs, but he nicely brings their faces to life: the lubricious Erasmus Darwin, the stern Robert Darwin, the avuncular Theodosius Dobzhansky, and the vivacious Yaghans - shown in both European and native garb - are especially appealing. Darwin's aging, from tousled boy to young explorer to bearded sage, is handled well. The main departure from historical accuracy is that Robert FitzRoy, the captain of the *Beagle*, is shown as sporting a thin and villainous mustache, which is part and parcel of the unsympathetic treatment he receives at Gurr's hands.^b Interestingly, FitzRoy receives a respectful treatment in Byrne's text, perhaps owing to the sympathetic portrait of the *Beagle*'s captain in Harry Thompson's splendid novel *This Thing of Darkness* (Thompson 2005), cited in *Darwin's* bibliography.

To be sure, the virtues of Gurr's drawings extend beyond historical accuracy. The style of the drawing is occasionally if unobtrusively varied to good effect: Darwin's famous listings of the pros and cons of marriage is

illustrated in a lighter style, as if by his own jotted cartoons, and the Oxford debate of 1860 is illustrated in the style of a Victorian magazine like *Punch*, which subtly conveys the hearsay nature of our knowledge of it. And Gurr seems to have undertaken the task of counterbalancing Byrne's usually deadpan prose with his lighthearted images. On p. 40, for example, the text 'Nowadays naturalists don't go around killing animals, but Darwin slaughtered lots of them' is ornamented with two panels showing a gorilla menacing a panda with a blunderbuss and a gorilla entertaining a panda at tea: a large check and a large X indicate which is the approved, and which is the disapproved, way of interacting with wildlife.

Why a gorilla? *Darwin* uses a framing device of a crew of various simians who are filming a documentary on Darwin (see Figure 1, for example). Sometimes they even appear in the background of the historical narrative, with one playing the role of the orangutan Jenny, observed by Darwin in the London Zoo in 1838. The effect is amusing - as when they conduct a running commentary on human courtship rituals, with Charles and Emma as their subjects - and helpful. But it is perhaps not as helpful as it could be: for the simians are nameless and never fully individuated, they speak in a stereotyped theatrical fashion ('there was a teensy little problemette with that scene', coos the director (p. 4)) likely to be unfamiliar to the reader, and they are portrayed as not especially knowledgeable about, or even particularly interested in, the topic of their documentary. So the chance to model the process of learning and understanding is, for the most part, missed.^c

None of these petty criticisms, however, should be taken to detract from Byrne and Gurr's remarkable achievement: to have presented a compelling and engaging introduction to Darwin's life and work, at a high level of historical and scientific accuracy, in the space of a scant hundred pages which, moreover, teem with attractive and amusing illustrations. (Indeed, only a real Darwin geek would probably have noticed all of the problems cited here). Originally published in the United Kingdom in 2009 as part of the celebrations of the Darwin bicentennial, thousands of copies of *Darwin: A Graphic Biography* were reportedly distributed free of charge. If thousands of copies of the book were to make their way to the classrooms and libraries of public schools in the United States, it would be good news for teachers and students alike: knowledge of Darwin's importance and interest in learning about evolution would skyrocket.

Endnotes

^aOr was he a nerd? It is perhaps unseemly to consider the question, since, according to a handy Venn diagram due to Randall Munroe (<http://xkcd.com/747/>), the

intersection of geeks and nerds is occupied by people with strong opinions on the distinction.

^bThe Royal Navy's regulations at the time prohibited officers from wearing mustaches: 'In the Royal Navy, shaving was compulsory. The upper lip had to be smooth ... Beards and moustaches were never seen in the Royal Navy until after the Crimean War' (Thompson 1975; but see May 1975 for a list of 'isolated instances' to the contrary). A martinet, FitzRoy is not likely to have flouted the regulations. Moreover, images throughout his life generally show him to be clean-shaven. Gurr may have been relying on the exception: a commonly reproduced lithograph, sometimes captioned as showing FitzRoy 'in his late twenties' (Moorehead 1969, p. 11) or 'as Darwin first knew him' (Nichols 2003, p. 20), which indeed seems to show FitzRoy with a wispy mustache. The provenance of the lithograph is unclear, but the National Library of New Zealand, which holds it, suggests (<http://natlib.govt.nz/records/23204218>) that it is based on a portrait in ink and wash (reproduced in Nicholas and Nicholas 1989, p. 75) by Philip Gidley King, who sailed as a midshipman on the *Beagle* with FitzRoy and Darwin; the portrait is item 69 in his father's album of drawings and engravings (held at the State Library of New South Wales and viewable on-line at <http://acms.sl.nsw.gov.au/album/albumView.aspx?acmsID=442570&itemID=823393>). But what King's portrait - as well as a contemporaneous pencil sketch by his father (Phillip Parker King, who supervised FitzRoy from 1828 to 1830 during the hydrographic survey of Patagonia and Tierra del Fuego); item 68 in the album - shows is simply a shading around Fitzroy's lips, which the artist must have mistaken for a mustache.

^cIn contrast, the characters in Jay Hosler's *Evolution: The Story of Life on Earth* (Hosler 2011; reviewed in Branch 2012) are well-developed, speak in ways familiar to the intended audience, and have compelling reasons to be interested in learning about evolution - even though they are squinches from the planet Glargal.

Competing interests

The author declares that he has no competing interests.

Received: 14 March 2013 Accepted: 17 March 2013

Published: 11 April 2013

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doi:10.1186/1936-6434-6-14

Cite this article as: Branch: Geeking out with Darwin. *Evolution: Education and Outreach* 2013 **6**:14.

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